PICEAS – Pacific Island Cetacean and Ecosystem Assessment Survey

Weekly Report, October 20 - 26, 2005

Karin A. Forney – Cruise Leader

Our first full week on Leg 4 has been a windy one, as we cruised along our transect SW of the Hawaiian Islands, and then northeastward again on a parallel track. We've searched for cetaceans, seabirds, and flying fish across several hundred miles of whitecaps, wind, sunshine and intermittent rain squalls. And although these conditions are trying, we did manage to locate several cetacean groups, and many interesting seabirds (see Seabird Squawk below). The cetaceans out here tend to be wary of vessels, and approaching them can be difficult or impossible. But we have two noteworthy observations this week.

The first was a moderate-sized group of pilot whales, *Globicephala macrorhynchus*, that allowed us to approach within a few hundred meters. Although this was still too far in the rough seas to obtain biopsies, we did take some photos, including a few that were close enough to show the unique characteristics of the animals' dorsal fins. These distinctive dorsal fin patterns allow identification of individuals from one encounter to the next. After the end of this cruise, our photos will be compared with those of pilot whales taken by other researchers in the central North Pacific, to look for matches and to examine movement patterns of individual whales.

The second interesting marine mammal sighting involved a small group of false killer whales, *Pseudorca crassidens*. They were amazingly adept at remaining unseen as they moved all around us in the rough seas. But soon after we caught a brief glimpse of the animals ahead of the ship, our acoustics team reported that the whales were literally right on top of the acoustics array. Intense sounds of echolocation clicks and whistles could be heard through the headsets, and it was apparent that the animals were 'checking out' the array. This was particularly interesting because false killer whales are known to take fish caught on longlines in this area, and we all wondered whether they assumed the 'tail' hanging off the back of the ship must be a line with fishy tidbits on it. But no, they found only hydrophones, which aren't nearly as tasty.

At the end of the week, we are once again heading SW on our third transect line. Winds should be lighter in the southern part of the study area, and we can't wait to get there!

Marine Mammal Sighting Summary

102005	0705	N16:10.53 W164:34.35	85.4 nmi	3.7
	1831	N14:54.75 W165:27.83		
102105	0656	N13:45.07 W166:15.55	116.1 nmi	4.8
	1840	N12:08.40 W167:21.53		
102205	0707	N11:18.15 W167:56.64	86.4 nmi	6.0
	1653	N09:59.48 W168:53.43		
102305	0701	N10:15.77 W167:25.55	69.1 nmi	5.5
	1832	N11:34.64 W166:30.24		
102405	0657	N12:39.74 W165:45.53	99.3 nmi	4.6
	1826	N14:05.23 W164:46.31		
102505	0656	N14:53.19 W164:14.48	77.3 nmi	5.3
	1820	N16:02.22 W163:26.48		
102605	0932	N17:07.43 W162:40.47	74.3 nmi	5.7
	1732	N16:02.67 W163:24.97		

CODE	SPECIES	TOT#
003	Stenella longirostris (unid. subsp.)	1
013	Stenella coeruleoalba	1
018	Tursiops truncatus	1
033	Pseudorca crassidens	2
036	Globicephala macrorhynchus	1
078	unid. small whale	2
	TOTAL	8

Acoustics Squeakly Report (Shannon Rankin & Jen Pettis)

There once was a time, long, long ago, where cetacean surveys ran without the input of acoustics. In the fledgling years, acoustics simply "listened," and did not actively locate animals.

This week we have returned to the dark ages, as our newly repaired array was unable to determine the location of animals. A full three and a half days of effort without localization earned us 16 dolphin schools, two of which were sighted (false killer whales and a group of striped dolphins). What is worse than no animals? Knowing that there are many animals around, but unable to actually find them.

Finally, our repaired backup array went in the water and in half a day of effort we were able to detect a distant sperm whale, we put the observers on a group of pilot whales, and we helped them continuously relocate a group of false killer whales. And then, our gremlins returned, and we have re-entered the dark ages. The question now: Is there a light at the end of the tunnel?

Seabird Squawk (Michael Force & Sophie Webb)

Hardly a dull moment in the birders' chair this week. Sure, we had our days when we felt almost as disillusioned as the mammal team, struggling through days of high sea states and low sighting rates. However, there are always a few birds around to maintain a high interest level and therefore, focus, on the 300-m strip transect. Our wildly fluctuating daily species totals reflect a well-known characteristic of the pelagic ecosystem—patchiness. Some days this week it was a Herculean struggle to eek out 8 species. Then there was Monday, a day with no marine mammal sightings, when we found an astonishing 20 species! Before one gets the impression we were overwhelmed with birds, it should be mentioned that over half of these were represented by only a single individual. This week we saw 29 species, again above average, and with many highlights too numerous to list. Some of the more notable include a couple of Wilson's Storm-Petrels, our first Phoenix Petrels in almost two months, a Galapagos Storm-Petrel, single Collared and Tahiti Petrels, all 4 Stercorariids (jaegers and skua), and 11 species of petrels. An exceptionally large skua refused to approach close enough for a definitive identification. Although all of our identified skuas have been of the expected South Polar species, the large size and lack of a pale nuchal collar of this particular bird suggested Brown Skua, still unconfirmed in the North Pacific Ocean. Sightings of Leach's Storm-Petrels are increasing as they move south from northern colonies to their tropical and sub-tropical wintering grounds; we saw at least one almost every day this week.

Biopsy Weekly Report (Suzanne Yin and Mark Deakos)

No biopsy opportunities.

Photo-ID Weekly Report (Chris Cutler and Beth Goodwin)

	Weekly Total	Cruise Total
Humpback whale fluke IDs	0	4
Bryde's whale	0	4
Melon-headed whale (# groups)	0	4
False killer whales (# groups)	0	3
Pilot whales (# groups)	1	13
Striped dolphins (# groups)	1	3
Spotted dolphins (# groups)	0	4
Spinner dolphins (# groups)	0	5
Fraser's dolphins (# groups)	0	2
Killer whales (# groups)	0	1
Risso's dolphins (# groups)	0	1
Rough-toothed dolphins (# groups)	0	1

Oceanographic Data Collections (Mindy Kelly and Lacey O'Neal)

This week was full of change; we noted change in the thermocline depth of the XBT casts, the amount of water that the POM system (filtering of seawater for particulate organic matter) filtered as well as the animals that net tow sampling delivered to us. We started the week with a shallow thermocline of about 55 meters; as the week went on the thermocline shifted to 65 then to 95 and is currently around 100 meters in depth. We have observed the POM system filter every last drop of water through its filters showing us that there is not much in the water we are putting into its. Net tow operations have been a bit on the windy side. We unfortunately had to cancel two manta tows due to high winds but still pulled through with almost all the bongo tows. It is exciting to say that this week net tow samples have finally delivered us some new animals to look at. The first of these animals found in the bongo sample was a heteropod. It was hard to miss this animal with its distinctive eyes peering out of the jar and the conical shell extending from its body (see photo). The second animal that was found in the manta sample was a janthinid. This animal uses an air raft to float on the surface of the water and has a violet shell that distinctively hangs below the raft; it was easily spotted at the surface of the sampling jar. One more animal to mention is the *Porpita porpita* or Blue Button, which was found in the manta sample. This floating hydroid

Heteropod captured in bongo tow

colony is a member of the Velellidae family and also was easily spotted on the surface. Thanks to Kevin Lackey (watch stander), the XO and Ensign Paul Smidansky (Bridge) as well as visiting scientist Scott Benson for all the cooperation and help with the net tow sampling.

DATE RANGE	DAY	CTD	XBT	Bongo	Manta
PICEAS05 Leg 4 10/21 to 10/22	Thursday	2	3	1	1
	Friday	1	4	0	0
	Saturday	2	3	1	1
	Sunday	2	3	1	1
	Monday	2	3	1	1
	Tuesday	2	3	1	0
	Wednesday	1	4	0	0
	Totals	12	23	5	4

Dippers Delight (Jim Cotton)

Dipping results this week were pretty much as expected with one exception, the collection of a brown spot-winged flyingfish (*C. atrisignis*; see photos at right), a new species for this cruise. The two-winged flyingfish (*Exocetus volitans*) were the most abundant fliers under our spotlights and the most frequently caught. Other fliers collected this week included fat heads (*Prognichthys sealei*), and one juvenile four wing (*Hirundichthys species*). Short wing flyingfish, lantern fish, flying squid and *Halobates* were collected in small numbers during our six stations.

Also new this week was the addition of Scott Benson to the team of dippers, welcome aboard Scott.

(Photos by Jim Cotton)

Overtime and hours

Standard sea time Oct 20-26 for all.